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AR 201-13214A

Occidental Chemical Corporation
Physical-Chemical Properties of Specific HPV Chemicals

Draft

Executive Summary

Enclosed are robust summary documents for 1-chloro-2-methyl benzene (CAS: 95-49-8) and 1-chloro-4-methyl benzene (CAS: 106-43-4). The third product, monochloromethyl benzene mixture (CAS: 25 168-05-2), is adequately represented by the included robust summary documents for the two compounds which make up this mixture (CAS: 95-49-8 and 106-43-4). The measured and estimated physical-chemical properties of these chemicals, hereafter referred to as monochlorotoluenes, are so similar that it would indicate that these chemicals should be evaluated as a category. Monochlorotoluenes, as a category of HPV chemicals, has a significant volume of information on physical, chemical, toxicological and environmental endpoints. Considering the monochlorotoluenes as a category of HPV chemicals makes the available set of information more complete and meaningful in the overall interpretation of the associated environmental, health and safety concerns.

The monochlorotoluenes exhibit low to moderate toxicity to exposed aquatic and terrestrial species. There is no indication of significant carcinogenic and/or mutagenic activity. Monochlorotoluenes **are not** ozone depleting, and do not appear to exhibit significant environmental persistence. The monochlorotoluenes have low measured aqueous solubility (-72 ppm@ 23°C [1]) and log octanol-water partition coefficients of 3.33-3.42 [2]. A measured BCF of 890 (± 340) was obtained for ^{14}C labeled 2-chlorotoluene in exposed fathead minnows using a solvent carrier (25:1 pentane:benzene) [3]. Laboratory BCFs generated with solvent carriers tend to overestimate the level of bioconcentration to be expected in the field, and Model estimated BCFs for these compounds are <100 [4]. While there is some indication of bioaccumulation/bioconcentration potential, it does not appear to represent a significant exposure issue considering the predicted environmental fate and partitioning characteristics of the monochlorotoluenes.

These compounds have relatively high vapor pressures (>3 mm Hg at 25 °C) [5], with estimated aqueous volatilization half-lives ranging from 1.3-108.9 hours respectively in river and lake models [4], both of which indicate preferential partitioning to the atmosphere. Monochlorotoluenes are expected to be subject to atmospheric oxidation with estimated half-lives of approximately 3-6 days [4]. The available information does not indicate a long term persistence issue.

In submitting the enclosed HPV robust summary documents, it is believed that there is sufficient information to assess the risks posed by monochlorotoluenes in their specific utilization niches. The enclosed represents Occidental Chemical Corporation's voluntary effort to fully characterize the monochlorotoluene products described herein. The

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information represents the summation of numerous tests and model estimates based on what is believed to be the best available data.

Matrix of Available and Adequate Data on Monochlorotoluene Category Members		
Test	CAS No. 95-49-8	CAS No. 106-43-4
<i>Physicochemical Properties Data</i>		
Melting Point	+	+
Boiling Point	+	+
Vapor Pressure	+	+
Partition Coefficient	+	+
Water Solubility	+	+
Test	<i>Environmental Fate & Pathway Data</i>	
Photodegradation	±	±
Stability in Water	±	0
Fugacity	MD	0
Biodegradation	+ / MD	0
Test	<i>Ecotoxicity Data</i>	
Acute Fish	+	MD
Aquatic Plants (Algae)	+	MD
Acute Invertebrate	+	MD
Test	<i>Health Data</i>	
Acute Oral	+	±
Acute Inhalation	+	0
Acute Dermal	0	0
Genetic Toxicity (in vivo) [chromosome aberrations]	+	0
Genetic Toxicity (in vitro) [gene mutations]	0	+
Repeated Dose	+	+
Reproductive	0	0
Developmental	+	0
(+) = Adequate data available, (±) = Data available but inadequate , (MD) = Model data available, (0) = No data available, (NA) = Not applicable due to chemical/physical properties		